SOUTHERN ENVIRONMENTAL LAW CENTER

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September 24, 2013

Jocelyn G. Boyd, Esq.
Chief Clerk and Administrator
Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

Re: S.C. Net Metering Standards/Docket No. 2005-385-E

Dear Ms. Boyd:

The Southern Environmental Law Center respectfully submits the following comments in Public Service Commission Docket No. 2005-385-E on behalf of the Coastal Conservation League (hereinafter "CCL") concerning South Carolina's net metering standards.[1]

In summary, our review of the experience to date in South Carolina leads us to conclude that modest changes to the state's net metering would lead to quicker deployment of cost-effective solar installations in the Palmetto State. The deployment motivated by these modest changes would be smaller in scale than is already being achieved in other states and far below levels that would materially impact other customers or resource planning. Thus, ongoing research into the benefits and challenges of adding solar at a very large scale should not prevent the adoption of modest improvements that allow South Carolina to catch up with other states on the solar playing field. Our specific recommendations, discussed in more detail below, are as follows:

1) **Raise the 100 kW cap on non-residential systems to 2 MW.** Limits on non-residential systems should be increased to allow large commercial and industrial customers to participate in net metering. Many states have significantly higher caps: Maryland (2 MW cap), Oregon (2 MW cap), Utah (2 MW cap), Florida (2 MW cap), Connecticut (2 MW cap), New York (2 MW cap), Pennsylvania (3 MW cap), Rhode Island (5 MW cap), New Mexico (80 MW cap), New Jersey (no cap), Arizona (no cap), and Ohio (no cap). Businesses are eager to locate in states that allow investments in renewable energy.

2) **Make parallel changes to the interconnection process to mirror the FERC process.** Owners of non-residential systems up to 2 MW should have access to a standardized interconnection process that ensures grid safety and reliability.

[1] The Public Service Commission of South Carolina has granted CCL's petition to intervene in this Net Metering docket. See Order No. 2013-507 (July 2, 2013).

3) **Raise the overall participation limit from 0.2% of peak demand to 2%.** This would raise the allowable net metered capacity across SC investor-owned territories from about 20 MW today to about 200 MW, creating significant room for growth while maintaining conservative aggregate capacity limits. Many states have set participation limits well above 0.2%, including West Virginia (3% limit), Massachusetts (3% limit), Rhode Island (3% limit), New York (3% limit), Vermont (4% limit), Delaware (5% limit), and Maryland (8% limit). Arizona, Oregon, Colorado, Florida, Connecticut, Pennsylvania, and North Carolina have no aggregate limit on their net metering programs.

4) **Eliminate annual resetting of customer credits.** Under existing standards, credits that customers have not used at the end of the annual billing cycle are forfeited to the utility. As a result, customers have an incentive to undersize their solar systems, to ensure that they will be able to recoup their full investment. This inhibits customer-driven investment in clean energy that could be flowing to other non-solar generating customers through the grid, to the benefit of all ratepayers. Indefinite rollover of their credits should be allowed.

5) **Allow owners to retain ownership of all renewable energy credits.** Renewable energy credits have market values across the country. In keeping with this best practice, utilities in South Carolina should not be allowed to use credits from net metering customers without offering adequate compensation.

6) **Allow community solar systems to participate.** Community solar has been utilized around the U.S. to give customer segments such as renters and those with heavily shaded rooftops a way to benefit from solar power. Several states allow community solar participants to benefit from net metering, including Massachusetts, California, Maine, and Colorado.

7) **Allow separate meters on a single property to be aggregated.** Allowing farms, government facilities and other property types to aggregate their meters for net metering purposes gives them the ability to optimize the size and location of any solar equipment to best meet the property's energy needs. Colorado, Illinois, Maine, New Jersey, New York, Oregon, Pennsylvania, Utah, Washington, and West Virginia allow aggregated meters.

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BACKGROUND ON NET METERING IN SOUTH CAROLINA

The Energy Policy Act of 2005 required state commissions to consider several standards that would lead to better utilization of energy resources, including a standard that would require regulated utilities to offer net metering to their customers. Section 1251 of the Act specifically required each state commission to initiate a proceeding within two years of the Act's adoption to consider the adoption of net metering standards, and to make a determination with respect to net metering standards within three years.

To carry out its duties under the 2005 Act, the S.C. Public Service Commission ("the Commission") held a hearing on implementation of metering provisions on May 15, 2007. Later that summer, the Commission issued an order providing for net metering in South Carolina, but

setting limits on the generating capacity of facilities that can net meter and an overall cap of 0.2% of a system's prior year peak load. See Dkt. No. 2005-385-E, Order No. 2007-618 at 2 (Aug. 30, 2007). These limits were proposed by the parties to the docket in part "to maintain system reliability while allowing utilities and consumers to test net metering" and also to preclude subsidization of net metering customers. *Id.*

The Commission then approved the net metering plans submitted by the regulated utilities and ordered a review of those programs in one year's time. *See* Order No. 2008-416. Later that year, a Net Metering Report was finalized by ORS and the South Carolina Energy Office, which made several recommendations about how to improve the utilities' programs. On February 3, 2009, the Commission issued a notice of hearing to conduct a review of net metering. The recommendations in the ORS Report formed the foundation for a settlement agreement that emerged between ORS and the other parties during the course of that review process.

In an order issued on August 6, 2009, the Commission approved several changes to the utilities' net metering program, reflecting the agreement of the parties to the docket. The adopted changes included a requirement that Duke Energy, Progress and SCE&G standardize their net metering programs to create uniformity and to increase clarity for the public; modification of the rate paid to residential net metering customers to reflect 1:1 standard retail rates for excess energy credits; and elimination of stand-by charges for residential customers. *See* Order No. 2009-552, Dkt. No. 2005-385-E at 5-6 (Aug. 6, 2009). The Commission also stated that the net metering program may be reviewed within four years at the request of the Commission or the parties. *Id*. at 6. This year, in Order 2013-589, the Commission sought comments on the performance of net metering to date.

As discussed below, the Commission's inquiry is timely. Much has changed since net metering was last examined. As of today, there are only 200 customers net metering in South Carolina. These citizens have invested in money-saving solar technologies, and are providing significant benefits to our state by putting clean energy onto the grid and bringing good jobs to South Carolina. As welcome as those benefits are, however, the scale of net metering in South Carolina remains miniscule compared to other states. Restrictions on system sizes, a cap on the program as a whole, and other limits are unnecessarily hindering investments, creating market uncertainty and pulling South Carolina behind its competitors. Moreover, the current rules leave net metering customers vulnerable to attempts to undercompensate them or even to impose penalties on self-generating customers without adequate justification. A strong net metering program must ensure fair compensation for these customers, which will lead to beneficial investments in South Carolina's clean energy future.

THE BENEFITS OF NET METERING GOING FORWARD

Net metering is an essential way to capture the significant solar resources that South Carolina has to offer. Net metering begins with a residential or commercial ratepayer who invests his or her own money to buy self-generating technology, such as solar panels. In addition to using the energy generated from solar to offset their own energy needs in real time, customers also interconnect their panels to the utility's grid, letting their excess solar power flow to the utility. The utility pays for that excess power by giving a credit to customers on their monthly bill, which they can use to offset energy purchases when needed. The utility can then take that excess power and sell it directly to nearby customers, thereby decreasing its costs associated with

generating power and transmitting it over long distances. To date, 43 states and Washington, DC have adopted net metering programs. While net metering can apply to many types of distributed energy resources, so far in South Carolina and other states, net metering has most commonly involved distributed solar photovoltaic ("solar PV") equipment. This trend is likely to continue in the near future; thus the importance of net metering in South Carolina is in part a function of the solar resource potential in our state.

South Carolina has enormous untapped solar resource potential. Today, the total installed capacity of solar PV statewide is less than 10 MW, and most of this capacity is distributed solar. A renewable resource potential assessment performed by the engineering firm Black & Veatch and delivered to the South Carolina Energy Advisory Council in January 2012 found that the near-term potential of solar PV in South Carolina is 850 to 1,700 MW.[2] The report indicates that this estimate reflects a level of solar penetration that could be supported by the existing grid, without significant investments aimed at increasing system flexibility to manage solar intermittency.[3] Based on the Black & Veatch estimate, our state could boost installed solar PV capacity by more than 100-fold from today's levels in the near term.

Boosting distributed solar capacity by even 10- or 20-fold in the next five years, from about 10 MW to 200 MW statewide, would yield considerable benefits for households and businesses across the state. Those homes and commercial facilities that choose to invest in rooftop solar arrays would save money on power bills, much like the bill savings impacts of installing efficient lighting or HVAC equipment. Importantly, customers that do not directly invest in solar arrays would also save on power bills as a result of avoided fuel expenditures and other cost savings realized by their utility due to the reduced demand on the utility's system—again, much like the system benefits realized from efficiency upgrades at individual homes and businesses. Reducing the amount of fuel burned by the utility would also improve air quality and decrease pollution and toxic waste associated with traditional generation sources, and relieve a portion of the risk that customers face from pending environmental regulations targeting air emissions and other negative impacts to South Carolina's natural resources. From a utility cost standpoint, distributed solar saves the utility on a range of expenses, including:

- Fuel
- Variable O&M
- Allowances for fossil plant air emissions
- Transmission and distribution line losses
- Generation capacity
- Transmission and distribution capacity
- Fuel price hedging

Thus, more distributed solar would reduce the amount of revenue utilities need to collect from all customers, putting downward pressure on electric rates. In addition, customer investment in solar would drive economic development around the state, creating jobs, raising gross state product,

[2] Black & Veatch. South Carolina Resource Study (January 2012). Available at: http://www.scstatehouse.gov/committeeinfo/EnergyAdvisoryCouncil/ResourceStudyComments/SCEACResourceStudy_FINAL.pdf.

[3] *Id*. at 4-9.

and expanding the tax base. These economic impacts would stem both from increased solar installation activity and from decreased imports of fossil fuels.

Net metering is a measured mechanism for driving modest increases in distributed solar deployment. It promotes grid security, energy self-reliance and consumer choice by giving ratepayers options for meeting their energy needs; it creates financial benefits for both program participants and non-participants; and it drives local economic development. Now is the time to increase the availability of net metering to more customers in order to help South Carolina tap its solar resource potential, and thereby take advantage of the many benefits solar has to offer.

RECOMMENDED CHANGES TO NET METERING RULES

In recent years, CCL's experience with the net metering programs in South Carolina has included discussions with our members, with members of the general public, with solar developers, with utilities and electric cooperatives, with academic institutions, and with members of the broader South Carolina business community regarding their experiences with the net metering programs in South Carolina. CCL has also conversed with representatives of these same stakeholder categories from other states, including states whose net metering programs and rules diverge substantially from those in place in South Carolina. Additionally, in our efforts to understand both the strengths and the weaknesses of South Carolina's net metering programs, we have reviewed analyses from around the country that assess alternative net metering rules and their impacts.

Based on these discussions and research efforts, we have identified several changes to South Carolina's net metering program that should be implemented with the aim of allowing program access to more homeowners and businesses around the state:

(1) Raise the 100 kW cap on non-residential systems to 2 MW;

The program's current size restriction on non-residential systems essentially excludes large commercial and industrial customers from participating in net metering. Many states have significantly higher caps on non-residential systems or have lifted system size restrictions altogether, such as Maryland (2 MW cap), Oregon (2 MW cap), Utah (2 MW cap), Florida (2 MW cap), Connecticut (2 MW cap), New York (2 MW cap), Pennsylvania (3 MW cap), Rhode Island (5 MW cap), New Mexico (80 MW cap), New Jersey (no cap), Arizona (no cap), and Ohio (no cap). More and more, large commercial and industrial businesses are expressing interest in investing in solar technologies to save on their energy bills and to meet renewable energy targets, and are eager to locate in states that are friendly to investments in renewable energy. We believe that raising the cap on non-residential system size is critical to bringing these investments to South Carolina.

(2) Make parallel changes to the interconnection process and limits, ideally creating a tiered interconnection standard that mirrors the FERC process;

Currently, interconnection processes under state jurisdiction only exist for systems up to 100 kW, mirroring the net metering program limits. The owners of non-residential systems up to 2 MW must also have access to a standardized interconnection process that ensures grid safety and reliability while minimizing the time and expense required to plug into the grid. The FERC and many states have implemented tiered interconnection

processes that require an appropriate level of study for each system coming onto the grid, based on that system's size and other factors.

(3) Raise the overall participation limit from 0.2% of utility jurisdictional peak demand for the prior calendar year to 2%;

Overall participation limits create market uncertainty, since those considering investments in solar are left unsure of when these limits will be reached, thus excluding them from being able to net meter. Moving from a 0.2% limit to a 2% limit would raise the allowable net metered capacity across SC IOU service territories from about 20 MW today to about 200 MW, creating significant room for growth while maintaining relatively conservative aggregate capacity limits. Similar to system size limitations, many states have set participation limits well above 0.2%, including West Virginia (3% limit), Massachusetts (3% limit), Rhode Island (3% limit), New York (3% limit), Vermont (4% limit), Delaware (5% limit), and Maryland (8% limit). Moreover, Arizona, Oregon, Colorado, Florida, Connecticut, and Pennsylvania have no aggregate limit on their net metering programs.

(4) Eliminate annual resetting of customer credit balances;

Under our state's current net metering standards, any credits that customers have not used at the end of the annual billing cycle are forfeited to their utility. This essentially allows the utility to reap the benefits of customers' investments in solar without fair compensation. As a result, customers have an incentive to undersize their solar systems, to ensure that they will be able to recoup their full investment. This inhibits customer-driven investment in clean energy that could be flowing to other non-solar generating customers through the grid, to the benefit of all ratepayers. For that reason, and in the interests of fairness, net metering customers should be allowed indefinite rollover of their credits, allowing them to apply those credits when needed.

(5) Allow system owners to retain ownership of all renewable energy credits;

While there may not currently be a market for these credits in South Carolina, renewable energy credits have market values in many areas of the United States. Moreover, utilities in these areas typically are required to offer market value for these credits in addition to the retail rate that they pay for excess solar energy. In keeping with this best practice, utilities in South Carolina should not be allowed to seize these credits from net metering customers without offering adequate compensation.

(6) Allow community solar systems to participate;

Community solar is solar PV that is owned by or provides power to multiple households, where a participant does not necessarily host the PV system on his/her own rooftop. These arrangements have been utilized around the U.S. and in particular give customer segments such as renters and those with heavily shaded rooftops the option to pay for and benefit from solar power. Several states allow community solar participants to benefit from net metering, including for example Massachusetts, California, and Maine.

(7) Allow separate meters on a single contiguous property to be aggregated for net metering participation.

Farms, government facilities and some other property types often have multiple electric meters. Allowing these energy users to aggregate their meters for net metering purposes gives them the ability to optimize the size and location of any solar equipment to best meet the property's energy needs. Several states allow aggregated meters to qualify and participate in net metering programs, including Colorado, Illinois, Maine, New Jersey, New York, Oregon, Pennsylvania, Utah, Washington, and West Virginia.

These changes would allow our state to continue to reap the benefits of modest solar growth over the next several years. We believe that a review of net metering, as contemplated in Order 2009-552, is warranted at this time, and that the items listed here would be an appropriate focus of such an examination.

LOW-LEVEL SOLAR PENETRATION AND SYSTEM IMPACTS

South Carolina's net metering program, similar to that of most states, provides a credit to customers at the standard retail rate for the solar energy that customers provide to the utility. Proponents of net metering advocate for this "1:1 credit at retail rate" approach because of its simplicity, because of the certainty that it creates for investors and customers, and because of its low administrative costs for utilities. Additionally, many states, like South Carolina, have implemented net metering programs with caps in place to ensure that program participation is restricted to prescribed levels.

CCL advocates for the expansion of net metering in South Carolina for all of the reasons stated above. However, it is important to note that there is some evidence that this 1:1 credit may actually be under-compensating net metering customers for the benefits that they are providing to the utility. There is a growing body of literature and utility practice related to the value of solar energy to utilities across the country.[4] Typically, the end goal of "value of solar" analyses is to guide utility ratemaking with respect to distributed solar resources, so that the costs and benefits of solar are quantified in detail and appropriately allocated to different customers and customer classes, consistent with existing ratemaking policy and practice. These analyses essentially ask this question: What are the benefits that net metering customers are providing to the utility, and what are the costs that they are imposing on the utility? These value of solar studies have been done for various purposes, but one emerging trend in these studies is that the benefits of distributed solar energy to the utility are often found to exceed its costs.[5] Studies show that distributed solar generation provides a wealth of benefits not just to self-generating customers, but also to non-net metering customers, as discussed above. This fact can give the Commission confidence that the limits currently placed on net metering can be raised for the

[4] *See*, *e.g.*, Hansen, Lena; Lacy, Virginia & Glick, Devi. A Review of Solar PV Benefit and Cost Studies (2013). Available at: http://www.rmi.org/Knowledge-Center/Library/2013-13_eLabDERCostValue.

[5] The benefits that studies have quantified include, but are not limited to: avoided energy, avoided or deferred generation capacity, avoided energy losses, avoided or deferred transmission and distribution capacity, grid support services, decreased costs associated with fuel price hedging, and decreased security risk. These benefits are in addition to the environmental, public health, economic and social benefits that come with increased investments in solar energy. *See* Hansen, et al. Review of Solar PV Benefit, *supra*.

benefit of not only net metering customers but of other customers as well. In other words, net metering is a "win-win" for *all* ratepayers, resulting in benefits that are spread across the entire grid in terms of lower costs from avoided energy, line losses, grid support, generation capacity, transmission and distribution capacity, fuel price hedging, and grid security.

Despite this growing body of evidence, some have voiced concerns that when some customers install rooftop solar, those customers avoid purchasing kilowatt hours ("kWh") from the utility, and that further, net metering exacerbates this situation—both because it effectively increases the number of kWh that the customer avoids purchasing, and because it reduces the payback period on solar array investments, thereby making solar a real option for more households and businesses. Ultimately, the utility sees a revenue shortfall as a result of distributed solar deployment, and must recover these lost revenues by raising base rates. Utilities have argued that under these circumstances, in effect regular utility customers would be subsidizing those customers that invested in rooftop solar.

But this argument ignores the demonstrated benefits that net metering brings to all customers. While utilities are correct that they will collect less revenue when customers net meter, these lower revenues are accompanied by decreased *costs* that need to be recovered from their customer base. While expanding net metering could result in minor revenue losses for utilities, it would also save utilities money on fuel and other items, as noted above. The *net impact* of all of the revenue losses and cost savings is the appropriate focal point. As with any financial decision, it would be inappropriate to consider the costs of an option while ignoring the benefits – for the utilities, for the individual customers who net meter, and for ratepayers overall.

South Carolina ratepayers would benefit greatly from comprehensive, transparent examinations of the value of solar to each utility. To be effective and beneficial, these analyses would need to adhere to emerging industry best practices, and would need to be performed within the context of an inclusive stakeholder process. We urge the Commission to initiate such a process in the near future.

We also recognize that such a process necessitates commitments of time and money from all parties involved. But a comprehensive value of solar analysis need not be completed in advance of allowing low levels of solar penetration, since the system impacts will not be material. We recommend that at present, the Commission make changes to the current net metering programs, to become effective in 2014, that will allow limited but meaningful expansion of solar deployment in South Carolina over the next several years. As solar deployment grows over time, and as South Carolina's utilities learn more about its system impacts (both costs and benefits), we recommend that the Commission establish a regulatory framework for valuing solar and applying valuation estimates to utility resource planning, rate design, and tariff offerings. This framework would be similar to the existing regulatory mechanisms governing utility energy efficiency and demand-side management programs. Absent an effective regulatory framework, utilities will make internal decisions about distributed solar that hinge as much, if not more, on shareholder impacts as on customer impacts, potentially leading to imprudent resource planning decisions.

CONCLUSION

Our state has a tremendous opportunity in solar. Net metering has helped drive customer-side investment in solar technologies, yielding benefits to both program participants and non-participants, and also boosting growth of a new industry and reducing the environmental impacts of power production in South Carolina. There are several simple but necessary steps that should be taken in 2014 to open up access to net metering to more households and businesses, and taking these steps would allow our state to continue to reap the benefits of modest solar growth. Further, by taking these steps now and simultaneously recognizing the need for a more comprehensive and data-driven approach to valuing solar especially as penetration levels rise, South Carolina's utilities can begin to gain more knowledge about this resource and its system impacts, which can be applied in future proceedings aiming to establish a longer term regulatory framework governing distributed solar.

Thank you for the opportunity to submit these comments and we look forward to working with you on next steps to improve South Carolina's net metering rules.

Very truly yours,

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Attorney for South Carolina Coastal Conservation League

CERTIFICATE OF SERVICE

I hereby certify that the parties listed below have been served via first class U.S. Mail with a copy of the Comments of the South Carolina Coastal Conservation League:

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I hereby certify that the parties listed below have been served via email with a copy of the Comments of the South Carolina Coastal Conservation League:

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This 30th day of September, 2013.

s/ J. Blanding Holman, IV
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